What is claimed is:

1. An apparatus for converting image signals from an interlaced scanning format to a progressive scanning format, the apparatus comprising:

a field motion estimator that estimates field motions between a current field and reference fields, said reference fields being prior or next to said current field; and

a field motion compensator that restores a missing line of said current field using information given from an optimal reference field if said optimal reference field unevenly matches to said current field, said optimal reference field being one of said reference fields having the shortest distance to said current field.

2. The apparatus of claim 1, further comprising:

a linear interpolator that restores said missing line of said current field by linearly interpolating lines located adjacent to said missing line in said current field if said optimal reference field evenly matches to said current field.

3. The apparatus of claim 2, further comprising:

an edge-preserving filter for smoother slanting lines of an image of said image signals.

4. The apparatus of claim 1, further comprising:

a field buffer that stores said current field and said reference fields and provides them to said field motion estimator and said field motion compensator.

5. The apparatus of claim 1, wherein said field motion estimator performs its computations in a vertical direction.

6. An apparatus for changing a vertical scanning rate of progressively scanned image signals, the apparatus comprising:

a field motion estimator that estimates field motions between a current field and reference fields, said reference fields being prior or next to said current field;

a field motion compensator that restores a missing line of said current field using information given from an optimal reference field if said optimal reference field unevenly matches to said current field, said optimal reference field being one of said reference fields having the shortest distance to said current field;

a frame motion estimator that estimates frame motions between adjacent frames using said progressively scanned image signals and said field motions estimated in said field motion estimator; and

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a frame motion compensator that provides a new composite image between said adjacent frames using said frame motions estimated in said frame motion estimator.

7. The apparatus of claim 6, further comprising:

a linear interpolator that restores said missing line of said current field by linearly interpolating lines located adjacent to said missing line in said current field if said optimal reference field evenly matches to said current field.

8. The apparatus of claim 7, further comprising:

an edge-preserving filter for smoother slanting lines of an image of said image signals.

9. The apparatus of claim 6, further comprising:

a field buffer that stores said current field and said reference fields and provides them to said field motion estimator and said field motion compensator.

10. The apparatus of claim 6, further comprising:

a frame buffer that stores said progressively scanned image signals and outputs said progressively scanned image signals to said frame motion estimator and said frame motion compensator.

11. The apparatus of claim 6, wherein said field motion estimator performs its computations in a vertical direction.

12. A method for converting image signals from an interlaced scanning format to a progressive scanning format, the method comprising:

estimating field motions between a current field and reference fields, said reference fields being prior or next to said current field; and

restoring a missing line of said current field using information given from an optimal reference field if said optimal reference field unevenly matches to said current field, said optimal reference field being one of said reference fields having the shortest distance to said current field.

13. The method of claim 12, further comprising:

restoring said missing line of said current field by linearly interpolating lines located adjacent to said missing line in said current field if said optimal reference field evenly matches to said current field.

14. The method of claim 13, further comprising:

making smoother slanting lines of an image of said image signals by using an edge-preserving filter.

15. The method of claim 12, further comprising:

storing said current field and said reference fields in a field buffer.

16. A method for changing a vertical scanning rate of progressively scanned image signals, the method comprising:

estimating field motions between a current field and reference fields, said reference fields being prior to or next to said current field:

restoring a missing line of said current field using information given from an optimal reference field if said optimal reference field unevenly matches to said current field, said optimal reference field being one of said reference fields having the shortest distance to said current field;

estimating frame motions between adjacent frames using said progressively scanned image signals and said estimated field motions; and

providing a new composite image between said adjacent frames using said frame motions estimated.

17. The method of claim 16, further comprising:

restoring said missing line of said current field by linearly interpolating lines located adjacent to said missing

line if said optimal reference field evenly matches to said current field.

18. The method of claim 17, further comprising:

making smoother slanting lines of an image of said image signals using an edge-preserving filter.

19. The method of claim 16, further comprising:

storing said current field and said reference fields in a field buffer.

20. The method of claim 16, further comprising:

storing said progressively scanned image signals in a frame buffer.

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